425-DIG.101

Scientific American Mar 15 1919 p 252

Made-to-order Gravel

THE majority of contractors have to take gravel as they find it and geologists tell us it was a long time in the making. It seems that it may no longer be necessary to wait for nature to form gravel from clay but that it may be made when and where wanted and the method is described in a recent number of the "Little Journal."

It seems that there was no gravel suitable for an aggregate in concrete to be found near the location of a southern shipyard where concrete ships were to be built. The question was answerable in three ways: Move the yard to gravel, haul in the gravel over congested railways or make the gravel from local clays. Fortunately the clays were found to possess the necessary characteristics to enable them to be burned to hard, though porous, lumps and a second series of experiments showed that when the rate and temperature of burning were controlled it was possible to produce lumps of the desired size.

This firing was easily done in a rotary cement kiln and when the concrete was finished it was found to pass the strength tests and to be nearly as strong as any other concrete. Then it was demonstrated to have unusual buoyancy and that meant that a given number of tons of such concrete made into a vessel would carry more tons of cargo than wooden vessels of the same rating, more than the ordinary concrete and almost as many as the steel vessels.

The incident is strikingly illustrative of the old saying that necessity is the mother of invention and shows how science in finding a substitute for a specific purpose sometimes improves on old materials.